

BOOK REVIEWS

V. BHASKAR, V. 2012. **Taxonomic Monograph on *Impatiens* L. (Balsaminaceae) of Western Ghats, South India: The Key Genus for Endemism.** (ISBN: 978-935067-257-0, pbk.). Centre for Plant Taxonomic Studies, 'Udayaravi', 2nd Main Road, Cholanagar, R.T. Nagar P.O., Bangalore – 560 032, INDIA. (Orders: vbhaskar49@yahoo.co.in). \$200.00, 283 pp., 4 tables, 173 plates.

The members of the genus *Impatiens* (*Balsaminaceae*) are popularly called balsams or jewel weeds. They are also referred to as 'orchid flowers' as their flowers resemble those of orchids. Several species and their hybrids are grown as prized ornamentals and are in great demand throughout the world because of their vivid colors. Taxonomically, the genus encompasses very difficult groups of plants to classify. After his monumental publication *The Flora of British India*, Sir J.D. Hooker returned to work on *Impatiens* because he found tremendous diversity in this genus. The work classified approximately one hundred and twenty-three species of *Impatiens*. However, the author was unsatisfied with his treatment and left a number of open ends for which he could not come to any conclusion.

This taxonomic monograph on *Impatiens* of Western Ghats provides a comprehensive treatment of 106 species and 13 varieties occurring in the richly biodiverse Western Ghats region. Fifteen new species and six new varieties described by the author himself are included. Taxonomic key for identification is provided to seven sections (formed by Hooker & Thomson 1860) with separate identification keys for species under each section. The author has resurrected *I. bababudenensis* Hook.f. which was synonymised under *I. latifolia* by J.S. Gamble. This seems quite logical as the former has $n=6$ and the latter has $n=3$ chromosome numbers, apart from other morphological differences between the two. Similarly, *I. fasciculata* (Lam.) has been resurrected as an independent species, and *I. chinensis* var. *brevicornis* Barnes has been elevated to specific level.

The most useful information provided by the author is the micro-morphological characters. These include various kinds of banding pattern of testa indumenta in brown-seeded species, pollen morphological characters, chromosome numbers for a majority of species, and, in a few cases, embryo sac type and anatomical characters. A consolidated summary on the chromosome numbers and pollen morphological characters reported by the author as well as other authors is also provided. The plate(s) provided for each of the species depicts photos of both morphological and micro-morphological characters which readily help one to immediately capture the striking characteristics of the species. The display of dissected floral parts, provided for most of the species, is another important aspect which was very much required for this genus. A case study on autecology of *Impatiens acaulis* – *I. scapiflora* complex has been well presented, clearly showing how the plant populations vary greatly from population to population, especially with regard to leaf morphology, flower color, spur length, and wing petals. The author rightly recognizes that stable qualitative traits should only be considered while describing new species.

There is handy information on the range of distribution of each species in the Western Ghats as well as the names of species collected from each of the hill ranges in the region. The author has ably attempted to discuss endemism and affinities, and also origin and evolution of *Impatiens* of Western Ghats. He believes that the occurrence of lower chromosome numbers of $2n=6$ or $n=3$ and larger chromosomes as in the case of *I. leschenaultii* and *I. latifolia* occurring in the Nilgiris Mountains and the second lowest chromosome number of $2n=12$ or $n=6$ as in the case of *I. talbotii*, *I. pulcherrima*, and *I. bababudenensis* in the northern part of Western Ghats, is clear proof of the primitiveness of Western Ghats species. The author has tried to correlate the type of seed: horny seed and brown seeded seeds with testa indumenta, with endemism and distribution of *Impatiens* species in Western Ghats. However, he finds no impact as the extent of endemism between these two categories of species is more or less the same.

Finally, the author has categorized the species of *Impatiens* reported in Western Ghats according to their threat status. He believes that 7 species are possibly extinct, 40 species fall under the category of critically

endangered, 33 under the category of endangered, and 16 are under vulnerable status. These conclusions certainly warrant immediately undertaking stringent measures to protect natural balsam growing habitats. It is also essential to undertake species rehabilitation programs to prevent extinction of endangered species. Another important contribution in this work, apart from the other original material, is the simple low cost technique of 'drip and splash method' which the author has developed to cultivate wild balsams in the greenhouse. This will definitely help to grow practically all balsams with ease for either research or ex-situ conservation.

This work deviates in the presentation of text and illustrations when compared to conventional taxonomic monographs; perhaps the author intentionally structured his work this way in order to break the monotony and make it user friendly. It would have been better if the author had followed the latest and standard nomenclatural norms and carried out better editing of the text before sending the manuscript to press, since lapses are found sporadically in the book. However, there is ample scope to improve the running text as well as to reduce the size of the book by printing plates back to back in the next edition.

Nevertheless, the author has done a commendable job and has produced an excellent piece of work on *Impatiens* of Western Ghats. I am strongly of the opinion that this type of monograph is needed for all the genera. Indeed, the author has set a model for future taxonomists who would like to take up monographic work on various groups of plants. I am sure it will greatly assist in correct identification as well as emphasizing the importance of using various other micro-morphological characters as supplementary traits in future monographic works. Though the book is priced on a no loss no profit basis, still the price is prohibitive and many individuals could not afford to own this book. However, it will be a good reference book in institutions engaged particularly in taxonomic research. On the whole, no monetary value can compensate for the amount of work and passion that has gone into this valuable monograph.

—S.N. Yoganarasimhan, Ph.D., FBS, FIAAT, Retired Head, Medicinal Plants Division,
Regional Research Centre (Ay), Govt. of India, Bangalore.
Presently Visiting Professor & Research Co-coordinator, Dept. of Pharmacognosy, M.S.
Ramaiah College of Pharmacy, Bangalore 560058, INDIA, Email: seekyogan65@yahoo.in

ROBERT P. ADAMS. 2011. **Junipers of the World: The Genus *Juniperus*, Third Edition.** (ISBN: 978-1-4269-5382-8 (sc) pbk., Print-On-Demand). Trafford Publishing Co., 1663 Liberty Drive, Bloomington, Indiana, 47403, U.S.A. (**Orders:** www.trafford.com, www.juniperus.org, 1-888-232-4444). \$29.95, 426 pp., b/w photos, illustrations, 8" × 11".

Robert Adams has devoted his entire academic career to the study of the genus *Juniperus* from graduate school days at the University of Texas beginning in 1966 until more recently at Baylor University where he is Professor of Biology. It is rare indeed for an author to reap the benefits of a concentrated study on any subject throughout their professional academic career that results in a book that is a masterpiece.

More evidence for this comprehensive treatment can be found in the Literature Cited that includes 118 papers published by Adams as part of a total of 373 mostly related to the taxonomy, nomenclature and identification of 67 species, 37 varieties 7 formas of Junipers. Additional information on evolution, ecology, geographic distribution and variation, phylogenetics based on DNA data and analysis with phylograms, cultivation and commercial uses of wood and wood products, especially the essential oils, provide an in-depth record of the biology of Junipers. This comprehensive listing of books and journal papers that covers 13 pages (368–382) will serve the user as a rich source of information about Junipers.

The book contents are organized into 11 chapters: Introduction; Geographic Variation; Speciation in sections of the genus; Keys to Junipers; Species Description, Distribution Maps and Plant Photos; Hybridization; Ecology; Seed Dispersal in *Juniperus*; Sex Expression in *Juniperus*; Cultivated Junipers; Commercial Use of Leaf and Wood Oil of *Juniperus*. A glossary of defined terminology was not included that would have made the mor-